

## ASBTRACT

Skin full-thickness wound in animals can be triggers to stress conditions and lead to poor quality of life. PRF and SMSCs have the potential in regeneration. Skin derived mesenchymal stem cells identification using ICC with antibody-labelled FITC CD105, CD73, CD90, CD45 then MTT assays conducted to see proliferation effect. Measurments of PDGF, VEGF, IGF, TGF-b were used ELISA. After 21 days, fibronectin and MMP8 in skin tissue was perfomed with IHC. The highest level of growth factor (PDGF, VEGF, IGF, TGF-b) was seen in the combination of PRF and SMSCs group. The SMSCs showed proliferation after combination with PRF. The fibronectin expression was highest in the PRF and SMSCs combination group, while MMP8 expression was seen in all groups. PRF and SMSCs had abundant of growth factors that helped in skin injury regeneration. It helped fibroblasts proliferation, migration and forming ECM (including fibronectin). Expression of MMP8 indicated tissue was in remodeling phase after 21 days. The combination of PRF and SMSCs shows better regeneration response in full-thickness skin wound.